

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Szabolcs Malomsoky, et. al. § Group Art Unit: 2617
Serial No: 10/595,246 § Examiner: Muthuswamy
Filed: March 29, 2006 § Confirmation No: 5528
§
Attorney Docket No: P18622-US1
Customer No.: 27045

For: PERFORMANCE MANAGEMENT OF CELLULAR MOBILE PACKET DATA NETWORKS

Via EFS-Web

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Date:	2/10/2010
Name:	Melissa Wingo
Signature:	

Declaration Pursuant to 37 CFR 1.131 to Overcome US 2005/0058161 A1
(Sorokopud)

Dear Examiner:

We, Szabolcs Malomsoky, András Veres, István Szabó, and Tamás Borsos, state that we are the inventors of the subject matter disclosed and claimed in the above-captioned patent application. Prior to the September 17, 2003 effective date of US Patent Application Publication No. 2005/0058161 A1 (Sorokopud), we had conceived (in WTO member country Hungary), our invention as described and claimed in the above-

identified patent application. Thereafter, we were diligent in the process of preparing the present patent application until its priority filing date of September 30, 2003. The aforementioned conception and diligence are evidenced by the following:

1. Prior to September 17, 2003, we conceived the invention as evidenced by our Invention Disclosure document (dated August 28, 2003), a copy of which is attached as Exhibit A.
2. Also prior to September 17, 2003, a copy of the Invention Disclosure was forwarded by Gabor Preda (our patent engineer) to Caroline de Champs (our patent assistant). A copy of Mr. Preda's letter is attached as Exhibit B.
3. Thereafter, the present patent application was prepared and then filed on September 30, 2003, which the U.S. Patent and Trademark Office has recognized as the official filing date of the present patent application.

The claim charts provided next for the pending independent claims 1, 28, 30 and 31 identify where the support for the claimed elements therein can be found in the Invention Disclosure document. Thus, the claim charts show the completion of the invention by the Applicant prior to September 17, 2003 the effective date of US Patent Application Publication No. 2005/0058161 A1 (Sorokopud).

1. A method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of:

capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network {ID Sect. Nos. 4.1.1, 4.1.1.1 and 4.1.2.1};

building a traffic and session database by parsing through the traces in order to extract and correlate information about each and every user session and user transaction which happened during the measurement period {ID Sect. Nos. 4.1.1, 4.1.1.2 and 4.1.2.2};

defining a set of key performance indicators, KPI, to be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters {ID Sect. Nos. 4.1.1, 4.1.1.3 and 4.1.3}; and

calculating the defined key performance indicators, wherein the step of calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database and obtaining a quality of service measure of the selected individual transactions {ID Sect. Nos. 4.1.1, 4.1.1.4 and 4.1.4}.

28. A system for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network, the system including a monitor node residing on a computer coupled to the cellular mobile packet data network comprising:

means for capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network {ID Sect. Nos. 4.1.1, 4.1.1.1 and 4.1.2.1};

means for building a traffic and session database by parsing through the traces in order to extract and correlate information about each and every user session and user transaction which has happened during the measurement period {ID Sect. Nos. 4.1.1, 4.1.1.2 and 4.1.2.2};

means for defining a set of key performance indicators to be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters {ID Sect. Nos. 4.1.1, 4.1.1.3 and 4.1.3}; and

means for calculating the defined key performance indicators, wherein the means for calculating further comprises means for selecting a subset of the user transactions from the session and traffic database and for obtaining a quality of service measure of the selected individual transactions {ID Sect. Nos. 4.1.1, 4.1.1.4 and 4.1.4}.

30. A computer program product embodied in a computer readable storage medium, for performance management in a cellular mobile packet data network including a monitor node, said computer program product comprising:

computer-readable program code for capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network {ID Sect. Nos. 4.1.1, 4.1.1.1 and 4.1.2.1};

computer-readable program code for building a traffic and session database by parsing through the traces in order to extract and correlate information about each and every user session and user transaction which happened during the measurement period {ID Sect. Nos. 4.1.1, 4.1.1.2 and 4.1.2.2};

computer-readable program code for defining a set of key performance indicators to be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters {ID Sect. Nos. 4.1.1, 4.1.1.3 and 4.1.3}; and

computer-readable program code for calculating the defined key performance indicators, wherein the computer-readable program code for calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database and obtaining a quality of service measure of the selected individual transactions {ID Sect. Nos. 4.1.1, 4.1.1.4 and 4.1.4}.

31. A method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of

capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network {ID Sect. Nos. 4.1.1, 4.1.1.1 and 4.1.2.1};

building a traffic and session database by parsing through the traces in order to extract and correlate all the information which is needed to the database, wherein the traffic and session database contains information about a plurality of user transactions which happened during a measurement period, wherein each user transaction is associated with a specific subscriber using captured session management signaling, and each user transaction is associated with a cell location using captured mobility management signaling {ID Sect. Nos. 4.1.1, 4.1.1.2 and 4.1.2.2 and FIG. 1};

defining a set of key performance indicators {ID Sect. Nos. 4.1.1, 4.1.1.3 and 4.1.3}; and

calculating the set of key performance indicators using a subset of the information in the traffic and session database to monitor user perceived end-to-end performance on a cell level {ID Sect. Nos. 4.1.1, 4.1.1.4 and 4.1.4}.

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the patent application or any patent issued thereon.

DECLARANT: Szabolcs Malomsoky
Szabolcs Malomsoky
2010 - 02 - 01
Date

DECLARANT: András Veres
András Veres
2010 - 02 - 08
Date

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DECLARANT: István Szabó

István Szabó

10. Feb. 2010

Date

DECLARANT: Tamás Borsos

Tamás Borsos

4. Feb. 2010

Date